

Project ID # VAN016

# Transportation Data Program

*A Multi-Lab Coordinated Project*

Stacy C. Davis, ORNL, *Principal Investigator*

Yan Zhou, ANL

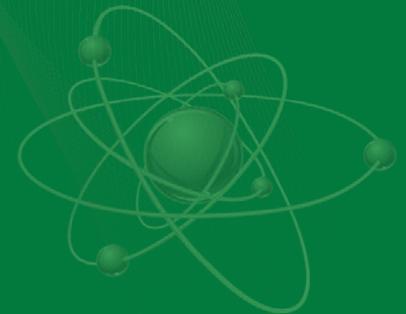
David Gohlke, ANL

June 21, 2018

2018 U.S. DOE Vehicle Technologies Office (VTO)

Annual Merit Review Meeting

*June 18-21, 2018*



# Overview

## Timeline



- Project start date: October 2017
- Project end date: September 2018
- Percent complete: 90%

## Barriers



- Barriers addressed
  - *Multi-Year Program Plan 2011 - 2015*  
Section 2.6 Outreach, Deployment and Analysis A, B, C  
Section 3.2 Program Analysis

## Budget



- Total project funding  
\$450K

## Partners



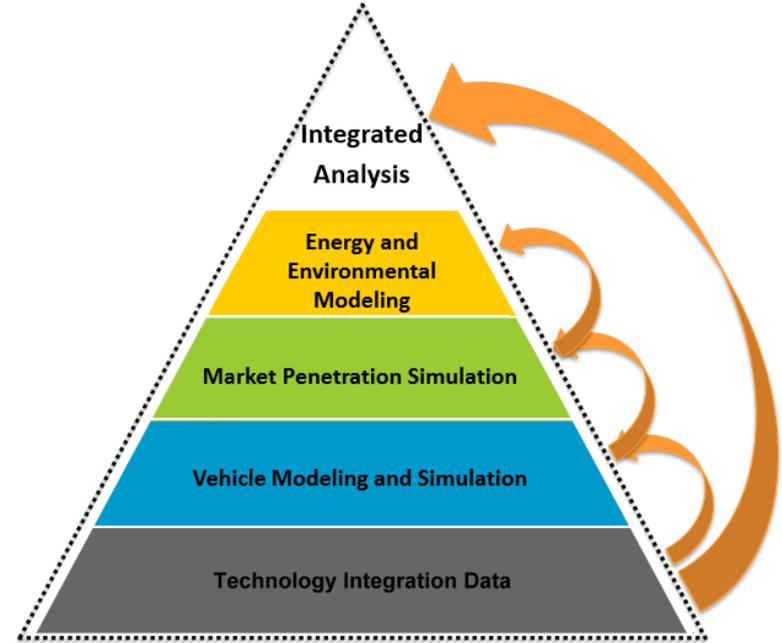
- Oak Ridge National Laboratory (ORNL)
- Argonne National Laboratory (ANL)

# Project Objectives

The objective of the Transportation Data Program is to provide consistent, quality data and information on the transportation sector for VTO researchers and other transportation analysts' use.

The Transportation Data Program disseminates data in each of the Technology Integration Goal Areas:

- National Security
- Economic Growth
- Affordability for Business and Consumers
- Reliability/Resiliency



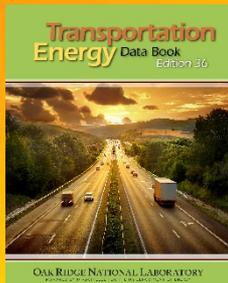
- Transportation analysts, and VTO staff require current and historical data to affect good decisions for the future.
- Technology integration data provide the foundation of the Analysis Program in the pursuit of moving people and goods using the most secure, energy-efficient, and cost-effective technologies.

# Milestones

Quarter	Milestone Description	Milestones for the Transportation Data Program FY17	Milestones for the Transportation Data Program FY18
Quarter 1	 U.S. E-drive Monthly Sales Report prepared monthly for posting on the E-drive website	Complete	Complete
Quarter 2	 Figure on comparison of U.S. E-drive annual sales with China/Europe	Complete	Complete
Quarter 3	 Fact of the Week prepared weekly for posting on the Vehicle Technologies website	Complete	On track
Quarter 4	 Draft of Transportation Energy Data Book delivered to VTO	Complete	On track
Quarter 4	Go/no-go milestone Determine if VTO research efforts require continued transportation data program support	Complete	On track

# Approach – Data Book

Since 1975



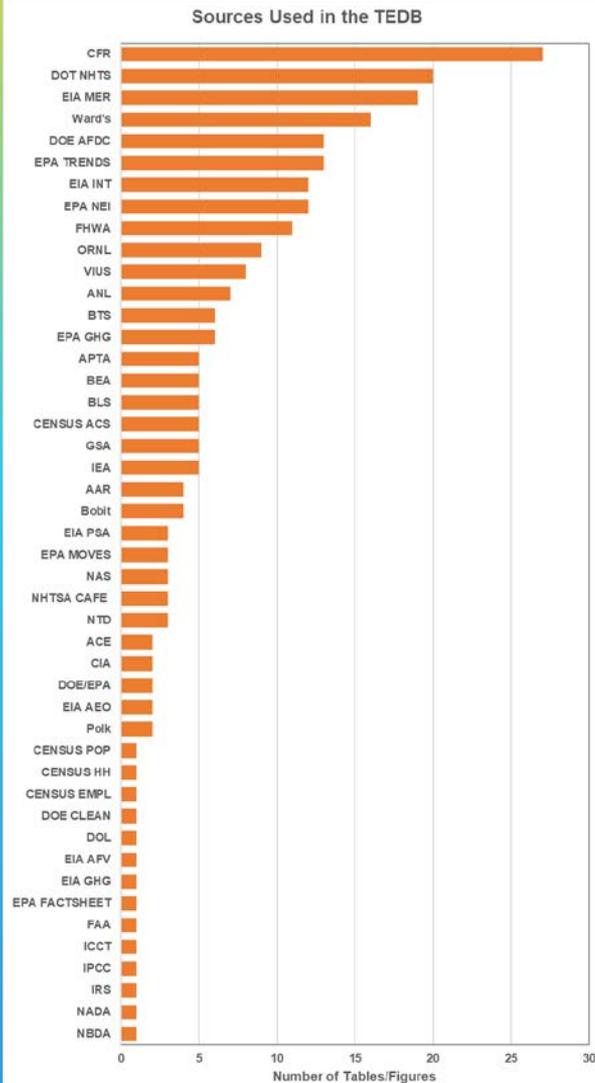
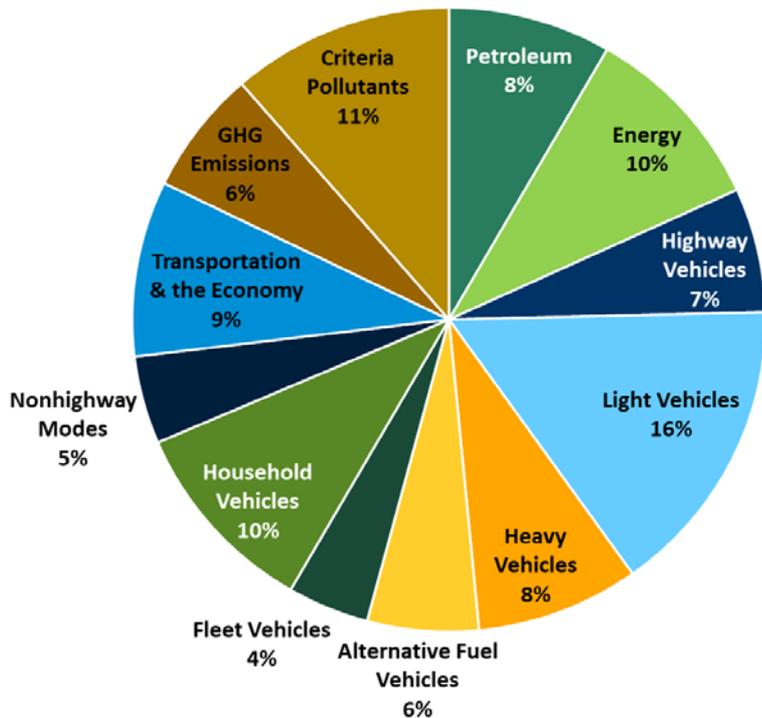
On-line report  
<http://www.cta.ornl.gov/data>

PDF & Excel formats

## About 50 different sources

## Twelve Chapters, 212 Tables and 52 Figures

Table/Figure Subjects in TEDB Edition 36



# Approach – Data Book

## Unique “Big Energy Table”

- Energy use in Btu by mode and fuel type
- Appendix A holds sources and assumptions
- About 20 sources
- Added electricity use to light vehicles two years ago (documented estimates)

Table 7.7  
Domestic Consumption of Transportation Energy by Mode and Fuel Type, 2009<sup>a</sup>  
(Million Btu)

Mode	Gasoline	Diesel	Other	Electricity <sup>b</sup>	Renewable <sup>c</sup>	Other <sup>d</sup>	Total
<b>Highway</b>	14,743.9	8,247.2	76.3	-	51.9	7.9	23,067.3
Light trucks	14,743.9	4,611	49.8	-	-	2.4	19,406.1
Car	6,714.9	35.3	-	-	-	2.0	6,752.2
Light truck <sup>e</sup>	7,929.0	3,575.7	49.8	-	-	0.4	12,654.9
Medium	7.0	-	-	-	-	-	7.0
Tractor	6.9	179.9	6.7	-	-	23.9	217.5
Trailer	0.1	7.0	0.2	-	-	0.0	7.3
Other <sup>f</sup>	0.0	0.0	0.0	-	-	0.0	0.0
<b>Nonhighway</b>	481.2	5,262.1	28.6	-	-	-	5,771.9
Class II tractors	232.2	785.7	31.9	-	-	-	1,049.8
Class I tractors	41.1	4,611.1	0.0	-	-	-	4,652.2
Class II tractors	714.4	875.3	0.2	2,086.4	461.8	464.2	4,602.3
Class I tractors	22.8	-	-	2,086.4	-	-	2,109.2
Domestic air carrier	-	-	181.9	-	-	-	181.9
Domestic air carrier <sup>g</sup>	-	-	2,571.4	-	-	-	2,571.4
International air carrier	-	-	473.4	-	-	-	473.4
Water	376.4	388.4	-	-	464.8	-	1,229.6
Recreational	102.4	223.8	-	-	-	-	326.2
Other <sup>h</sup>	174.0	164.6	-	-	464.8	-	703.4
Rail	-	538.8	-	-	-	54.8	593.6
Tram	-	2.4	-	-	-	-	2.4
Interstate	-	22.4	-	-	-	-	22.4
Other <sup>i</sup>	-	15.0	-	-	-	-	15.0
Other <sup>j</sup>	-	0.1	-	-	-	-	0.1
<b>TOTAL</b>	15,225.1	13,509.3	76.3	2,086.4	464.8	37.9	31,650.8

Source:  
See Appendix A, Section 2, Energy Use Sources.

<sup>a</sup> Certain consumption only. Totals may not include all possible uses of fuels for transportation (e.g., noncombustible).  
<sup>b</sup> Only rail and water energy was counted for electricity. Persons stations include primary energy use for electricity which included generation and distribution losses.  
<sup>c</sup> Totals may not add due to rounding.  
<sup>d</sup> For wind, low use trucks.  
<sup>e</sup> One half of total used by domestic carriers in international operations.

## Value-Added:

- Combine data to present unique data series.
- Present data from different tables/reports to show a unique perspective.

Table 4.1  
Summary Statistics for Cars, 1970-2005

Year	Registration <sup>a</sup>	Motor vehicle (million units)	Motor vehicle (million units)	Light truck (million units)	Light truck (million units)
1970	4,737,000	3,737,000	3,737,000	0	0
1975	7,000,000	5,000,000	5,000,000	0	0
1980	12,200,000	8,200,000	8,200,000	0	0
1985	17,500,000	11,500,000	11,500,000	0	0
1990	22,800,000	14,800,000	14,800,000	0	0
1995	28,100,000	18,100,000	18,100,000	0	0
2000	33,400,000	21,400,000	21,400,000	0	0
2005	38,700,000	24,700,000	24,700,000	0	0

Table 4.2  
Summary Statistics for New Autos, Year-Over-Year Trends, 1970-2005

Year	Registration <sup>a</sup>	Motor vehicle (million units)	Motor vehicle (million units)	Light truck (million units)	Light truck (million units)
1970	4,737,000	3,737,000	3,737,000	0	0
1971	5,100,000	4,100,000	4,100,000	0	0
1972	5,500,000	4,500,000	4,500,000	0	0
1973	5,900,000	4,900,000	4,900,000	0	0
1974	6,300,000	5,300,000	5,300,000	0	0
1975	6,700,000	5,700,000	5,700,000	0	0
1976	7,100,000	6,100,000	6,100,000	0	0
1977	7,500,000	6,500,000	6,500,000	0	0
1978	7,900,000	6,900,000	6,900,000	0	0
1979	8,300,000	7,300,000	7,300,000	0	0
1980	8,700,000	7,700,000	7,700,000	0	0
1981	9,100,000	8,100,000	8,100,000	0	0
1982	9,500,000	8,500,000	8,500,000	0	0
1983	9,900,000	8,900,000	8,900,000	0	0
1984	10,300,000	9,300,000	9,300,000	0	0
1985	10,700,000	9,700,000	9,700,000	0	0
1986	11,100,000	10,100,000	10,100,000	0	0
1987	11,500,000	10,500,000	10,500,000	0	0
1988	11,900,000	10,900,000	10,900,000	0	0
1989	12,300,000	11,300,000	11,300,000	0	0
1990	12,700,000	11,700,000	11,700,000	0	0
1991	13,100,000	12,100,000	12,100,000	0	0
1992	13,500,000	12,500,000	12,500,000	0	0
1993	13,900,000	12,900,000	12,900,000	0	0
1994	14,300,000	13,300,000	13,300,000	0	0
1995	14,700,000	13,700,000	13,700,000	0	0
1996	15,100,000	14,100,000	14,100,000	0	0
1997	15,500,000	14,500,000	14,500,000	0	0
1998	15,900,000	14,900,000	14,900,000	0	0
1999	16,300,000	15,300,000	15,300,000	0	0
2000	16,700,000	15,700,000	15,700,000	0	0
2001	17,100,000	16,100,000	16,100,000	0	0
2002	17,500,000	16,500,000	16,500,000	0	0
2003	17,900,000	16,900,000	16,900,000	0	0
2004	18,300,000	17,300,000	17,300,000	0	0
2005	18,700,000	17,700,000	17,700,000	0	0

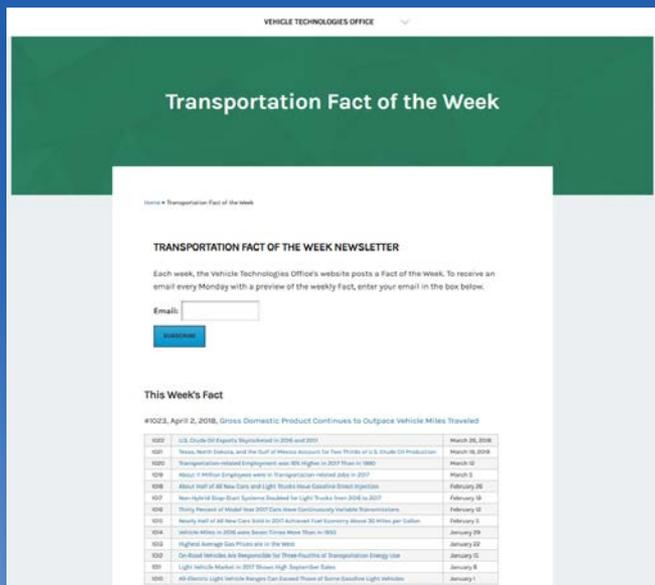
Car and Light Truck Population Data  
 FHWA discontinued this in 2009;  
 ORNL/ANL develop estimates each year to  
 continue the series

# Approach – FOTW

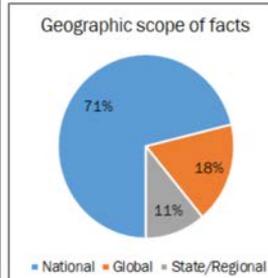
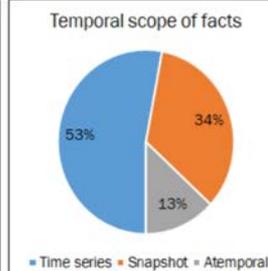
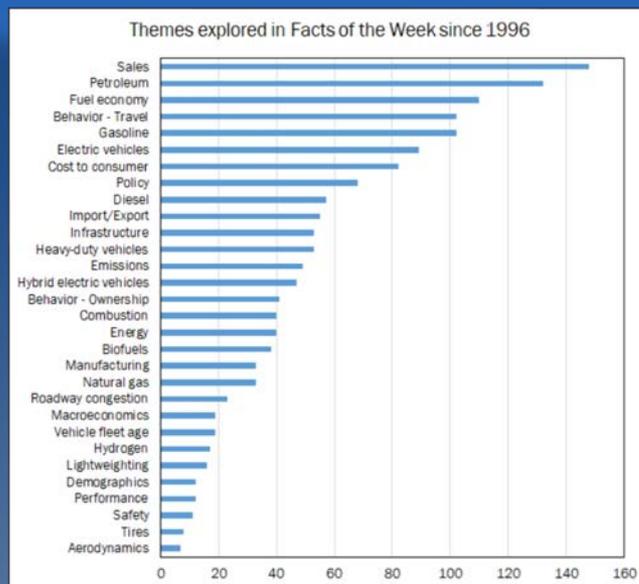
Since 2001



- Fact consists of a graphic, explanatory text, source, and an Excel file.
- Fact is posted on the VTO website every Monday.
- Fact is emailed to an ever-growing subscription list every Monday.



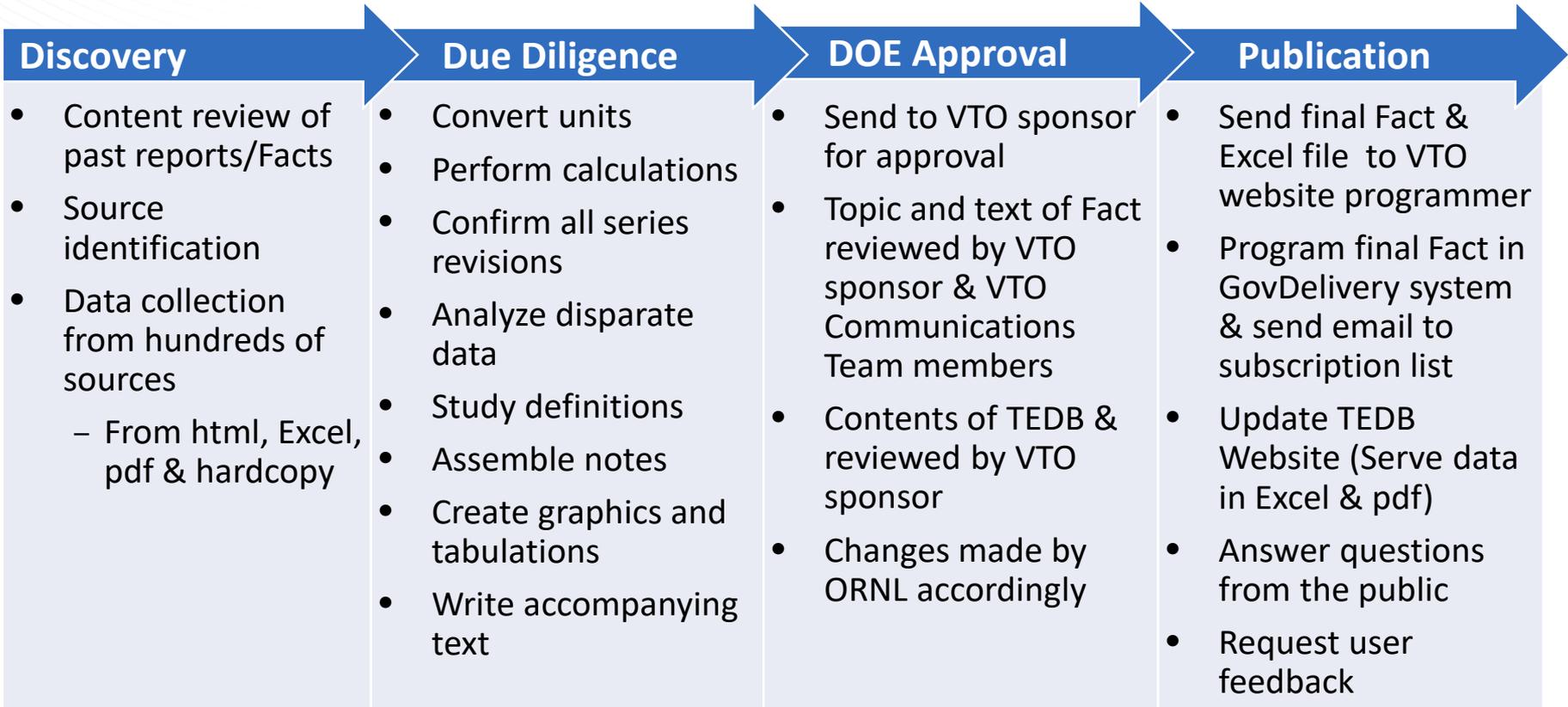
<http://energy.gov/eere/vehicles/transportation-fact-week>



# Approach – Data Book & Fact of the Week

Barrier Addressed: Provides consistency to improve analyses of the transportation sector which contribute to policies, programs, and technologies. Provides a wealth of data and information which reduces the burden on VTO analysts to compile the data individually.

- The Data Book is mostly tabular historical data, especially good for modeling use.
- The Fact of the Week is widely varied on topic and source.



Primary mechanism: Publish data and information in PDF, Excel, and HTML on VTO and ORNL websites for VTO researchers and others to access.

# Approach - E-Drive Data & Analysis

Barriers Addressed: Provides readily-used monthly sales by make and model, estimates impact of light-duty electrification, analyzes regional sales patterns to improve modeling of the electric-drive vehicle ecosystem, and supports other DOE programs.

- Provides reference data for vehicle choice modeling and DOE/EERE impact analysis.
- Compares the U.S. with other worldwide leading PEV markets (e.g. China, Europe)

Topic	Data and Analysis Types (Examples)
U.S. E-drive sales	Monthly sales of HEV, PHEV and BEV
International sales	Monthly sales of HEV, PHEV and BEV in China, Europe
Infrastructure	Targets, number of charging stations (by type)
Regional sales pattern	Contributing factors to PEV adoption Comparison between major MSAs

Primary mechanism: Monthly E-drive vehicle sales by make and model of four global markets (Canada, China, Europe, Japan and U.S)

# Technical Accomplishments and Progress for the Data Book

## What's New for FY18

## Older editions accessible from the website



<https://cta.ornl.gov/data/editions.shtml>

## Data Book updates twice a year

Edition 36 published December 2017

Edition 36.1 published April 2018

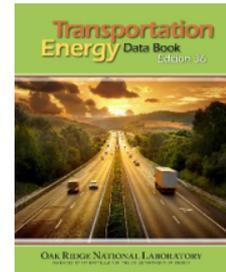
Edition 36.2 will be published in August 2018

Edition 37 draft due at end of FY

## Going eco-friendly

### The Transportation Energy Data Book is going ECO-FRIENDLY!

Beginning this year, the *Data Book* will not be printed in hardcopy format, but will be posted on-line in both PDF and spreadsheet format at the website <http://cta.ornl.gov/data>. Edition 36 has been recently posted to the website. One advantage to this is that updates to the report can be made throughout the year when new source material becomes available, instead of waiting for a once-a-year update. A new edition reflecting all changes will be released annually. To be notified annually when the new edition is released, email [DavisSC@ornl.gov](mailto:DavisSC@ornl.gov).



Feel free to print the full PDF document if you continue to prefer a hardcopy. For those without access to a computer, please call Stacy Davis at 865-946-1256 to discuss options for access to the document.

4-12

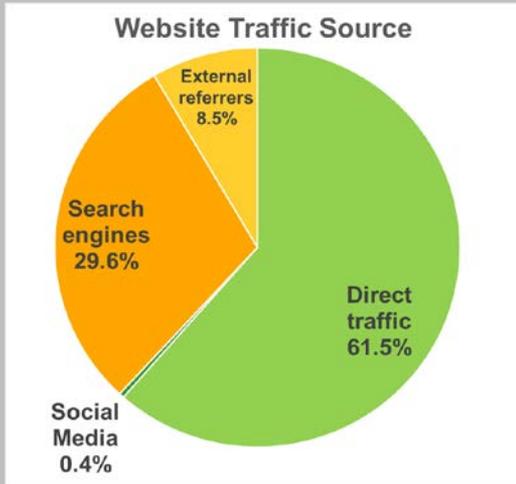
The average fuel economy of cars more than doubled from 1975 to 2016 while the average fuel economy of light trucks grew by 84% in that same time period. This was not steady annual growth, but growth in the 1970's and early 1980's followed by a long period with little improvement. Growth resumed around 2008-2009.

Table 4.11 (Updated April 2018)  
Production and Production-Weighted Fuel Economies of New Domestic and Import Cars, Light Trucks and Light Vehicles, Model Years 1975-2016\*

Model Year	All Cars		All Light Trucks		All Light Vehicles	
	Production (Thousands)	Fuel Economy (mpg)	Production (Thousands)	Fuel Economy (mpg)	Production (Thousands)	Fuel Economy (mpg)
1975	8,240	17.5	1,971	11.6	10,214	15.1
1980	9,441	20.0	2,061	15.0	11,502	18.2
1985	10,579	22.0	2,081	15.0	12,660	21.2
1986	11,074	23.7	2,291	18.3	13,365	21.8
1987	10,526	23.8	4,039	18.3	14,565	22.9
1988	10,845	24.1	4,450	17.8	15,295	21.9
1989	10,126	23.6	4,327	17.6	14,453	21.4
1990	8,875	23.5	3,740	17.4	12,615	21.3
1991	8,748	23.3	3,825	17.8	12,573	21.3
1992	8,350	22.9	3,823	17.3	12,173	20.8
1993	8,959	23.0	4,281	17.5	13,240	20.9
1994	8,747	23.0	3,578	17.2	14,325	20.4
1995	9,616	23.3	3,529	17.0	13,145	20.2
1996	9,111	23.1	4,341	17.2	13,454	20.4

<http://cta.ornl.gov/data>

# Technical Accomplishments and Progress for the Data Book



## Top External Referring Domains

- en.wikipedia.org
- links.govdelivery.com
- www.energy.ca.gov
- www.climatecentral.org
- www.ornl.gov
- www.eia.gov

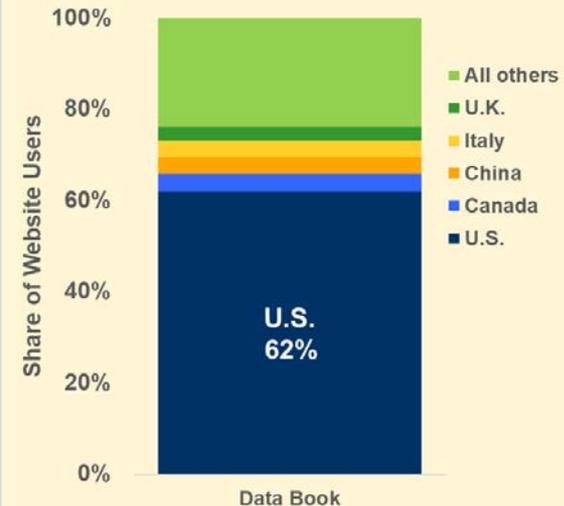
## Page Views, Downloads, Citations

Month-Year	Page Views	PDF Downloads	XLS Downloads
October 2017	6,515	1,089	1,236
November 2017	6,822	1,555	1,416
December 2017	6,049	668	765
January 2018	6,546	686	978
February 2018	6,452	566	1,174
March 2018	5,750	500	916

## Google Scholar Citations

About 3,030

## Geographic Location of Website Users



# Technical Accomplishments and Progress for the Data Book

Rank	PDF Files	Description
1	Full_Doc.pdf	Full Document
2	Chapter02.pdf	Energy
3	Chapter04.pdf	Light Vehicles and Characteristics
4	Chapter03.pdf	All Highway Vehicles and Characteristics
5	Chapter05.pdf	Heavy Vehicles and Characteristics
6	Chapter06.pdf	Alternative Fuels and Advanced Technology Vehicles and Characteristics
7	Chapter08.pdf	Household Vehicles and Characteristics
8	Chapter11.pdf	Greenhouse Gas Emissions
9	Chapter07.pdf	Fleet Vehicles and Characteristics
10	Chapter10.pdf	Transportation and the Economy
11	Highlights for Edition 36	Highlights for Edition 36
12	Chapter01.pdf	Petroleum
13	Quick_Facts.pdf	Quick Facts inside document front cover
14	Chapter09.pdf	Nonhighway Chapter
15	Appendix_B.pdf	Conversions

Unique  
“big energy table”  
and FHWA tables  
reflected in both  
lists

Rank	Excel Files	Description
1	Table8_03.xls	Household Vehicle Ownership, 1960–2015 Census
2	Table8_01.xls	Population and Vehicle Profile, 1950–2015
3	Table4_01.xls	Summary Statistics for Cars, 1970–2015
4	Table5_02.xls	Summary Statistics for Class 7-8 Combination Trucks, 1970–2015
5	Table5_01.xls	Summary Statistics for Class 3-8 Single-Unit Trucks, 1970–2015
6	Table6_02.xls	Hybrid and Plug-In Vehicle Sales, 1999–2016
7	all_spreadsheets.xls	Zip file of all Data Book spreadsheets
8	Table2_08.xls	Transportation Energy Use by Mode, 2014–2015
9	Table2_03.xls	Distribution of Transportation Energy Consumption by Source, 1950–2016
10	Table8_02.xls	Vehicles and Vehicle-Miles per Capita, 1950–2015
11	Table2_07.xls	Domestic Consumption of Transportation Energy by Mode and Fuel Type, 2015
12	Table4_03.xls	Summary Statistics for Light Vehicles, 1970–2014
13	Table2_14.xls	Passenger Travel and Energy Use, 2015
14	Table6_01.xls	Estimates of Alternative Fuel Highway Vehicles Made Available, 2004-2015
15	Table3_04.xls	U.S. Cars and Trucks in Use, 1970–2015

E-drive data →

# Technical Accomplishments and Progress for the Fact of the Week

Num	Title	Date
1031	<a href="#">Three-fourths of All Workers Drove Alone to Work in 2016</a>	May 28, 2018
1030	<a href="#">Plug-in Vehicles Consumed Nearly Two Terawatt-hours of Electricity in 2017</a>	May 21, 2018
1029	<a href="#">Plug-in Vehicles Displaced 216 Million Gallons of Gasoline in 2017</a>	May 14, 2018
1028	<a href="#">The Price of a Gallon of Premium Gasoline Averaged 50 Cents Higher than Regular Gasoline in 2017</a>	May 7, 2018
1027	<a href="#">Manufacturers Recommend Premium Gasoline for 47% of New Vehicle Models in 2017</a>	April 30, 2018
1026	<a href="#">Nearly Two-Thirds of U.S. Plug-In Vehicles Were Assembled in the United States</a>	April 23, 2018
1025	<a href="#">China's Plug-in Vehicle Market Share was More Than Double That of the U.S. for 2017</a>	April 16, 2018
1024	<a href="#">Changes in Vehicle Miles of Travel Often Mirror Gasoline Price Changes</a>	April 9, 2018
1023	<a href="#">Gross Domestic Product Continues to Outpace Vehicle Miles Traveled</a>	April 2, 2018
1022	<a href="#">U.S. Crude Oil Exports Skyrocketed in 2016 and 2017</a>	March 26, 2018
1021	<a href="#">Texas, North Dakota, and the Gulf of Mexico Account for Two-Thirds of U.S. Crude Oil Production</a>	March 19, 2018
1020	<a href="#">Transportation-related Employment was 16% Higher in 2017 Than in 1990</a>	March 12, 2018
1019	<a href="#">About 11 Million Employees were in Transportation-related Jobs in 2017</a>	March 5, 2018
1018	<a href="#">About Half of All New Cars and Light Trucks Have Gasoline Direct Injection</a>	February 26, 2018
1017	<a href="#">Non-Hybrid Stop-Start Systems Doubled for Light Trucks from 2016 to 2017</a>	February 19, 2018
1016	<a href="#">Thirty Percent of Model Year 2017 Cars Have Continuously Variable Transmissions</a>	February 12, 2018
1015	<a href="#">Nearly Half of All New Cars Sold in 2017 Achieved Fuel Economy Above 30 Miles per Gallon</a>	February 5, 2018
1014	<a href="#">Vehicle-Miles in 2016 were Seven Times More Than in 1950</a>	January 29, 2018
1013	<a href="#">Highest Average Gas Prices are in the West</a>	January 22, 2018
1012	<a href="#">On-Road Vehicles Are Responsible for Three-Fourths of Transportation Energy Use</a>	January 15, 2018
1011	<a href="#">Light Vehicle Market in 2017 Shows High September Sales</a>	January 8, 2018
1010	<a href="#">All-Electric Light Vehicle Ranges Can Exceed Those of Some Gasoline Light Vehicles</a>	January 1, 2018
1009	<a href="#">Nearly Five Billion Trips Were Made Using Transit Rail in 2016</a>	December 25, 2017
1008	<a href="#">Median All-Electric Vehicle Range Grew from 73 Miles in Model Year 2011 to 114 Miles in Model Year 2017</a>	December 18, 2017
1007	<a href="#">California has over 15,000 Electric Vehicle Charging Units, Ten Percent of which are Fast Chargers</a>	December 11, 2017
1006	<a href="#">Plug-in Electric Vehicle Charging Infrastructure Needs for Nationwide Coverage</a>	December 4, 2017
1005	<a href="#">Eleven Diesel Models for Sale in the U.S. in Model Year 2017</a>	November 27, 2017
1004	<a href="#">California Had the Highest Concentration of Plug-in Vehicles Relative to Population in 2016</a>	November 20, 2017
1003	<a href="#">Cars Constituted a Larger Fraction of Light-Duty Vehicle Sales for Fleets than Retail Vehicle Sales in 2016</a>	November 13, 2017
1002	<a href="#">The Trade Deficit of Petroleum in 2016 Was at its Lowest Since 1998</a>	November 6, 2017
1001	<a href="#">One Thousand Transportation Analysis Facts of the Week have been Published Online</a>	October 30, 2017
1000	<a href="#">U.S. Petroleum Production Met Demand from Transportation Petroleum Consumption in 2015</a>	October 23, 2017
999	<a href="#">Despite Rise in Vehicle Miles of Travel, Highway Pollutants in 2016 Are Less Than Half as in 2002</a>	October 16, 2017
998	<a href="#">Highway Vehicles Responsible for a Declining Share of Pollutants</a>	October 9, 2017
997	<a href="#">Average Age of Cars and Light Trucks Was Almost 12 Years in 2016</a>	October 2, 2017

<http://energy.gov/eere/vehicles/transportation-fact-week>

#### TRANSPORTATION FACT OF THE WEEK NEWSLETTER

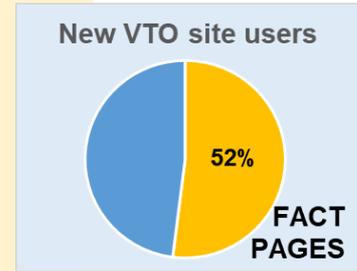
Each week, the Vehicle Technologies Office's website posts a Fact of the Week. To receive an email every Monday with a preview of the weekly Fact, enter your email in the box below.

Email:

> 11,500  
subscribers  
to the  
Fact of the Week  
Monday email  
distribution

# Technical Accomplishments and Progress for the Fact of the Week

- The Fact of the Week accounted for 33% of all VTO website pageviews in FY 2017
- About 52% of new VTO site users came into the site through the Fact of the Week
- In the most visited VTO website pages:
  - Fact 915, Average Historical Annual Gasoline Pump Price from 1929-2015*
  - Fact 861, Idle Fuel Consumption of Selected Gasoline and Diesel Vehicles*



**ENERGY.GOV**  
Office of  
**ENERGY EFFICIENCY &  
RENEWABLE ENERGY**

Vehicle Technologies Office

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October 23, 2017

**Celebrating the 1,000th Transportation Analysis Fact of the Week**

The U.S. Department of Energy is celebrating its 40th birthday this month and the [Transportation Analysis Fact of the Week](#) reached its own milestone.

On October 23, 2017, the [Vehicle Technologies Office published Fact #1000](#). The Transportation Analysis Fact of the Week was first published on July 12, 1996, as a means of highlighting data trends for DOE staff and the transportation community at large.

Popular topics explored in the Fact of the Week include vehicle fuel economy, petroleum use and production, vehicle sales, and traveler behavior. Facts related to advanced combustion technologies and vehicle electrification have become more popular in the last few years.

The Fact of the Week is updated online every Monday and released via newsletter. Last year they were viewed over 160,000 times. [Click here to subscribe to future Facts of the Week.](#)

Word cloud showing most frequently used words in titles of first 1000 Facts of the Week – generated at <https://www.jasondavies.com/wordcloud/>

DOE celebrated the 1,000<sup>th</sup> Fact in October

An ANL / ORNL collaborative report on the Fact of the Week was released the same month.

**Historical Review of the Transportation Analysis Fact of the Week, 1996–2017**

ORNL/TM-2017/696

David Collins  
Stacy Davis

October 2017

Approved for public release. Distribution is unlimited.

OAK RIDGE NATIONAL LABORATORY  
MANAGED BY UT-BATTELLE FOR THE U.S. DEPARTMENT OF ENERGY

**FOTW #1000, October 23, 2017: U.S. Petroleum Production Met Demand from Transportation Petroleum Consumption in 2015**

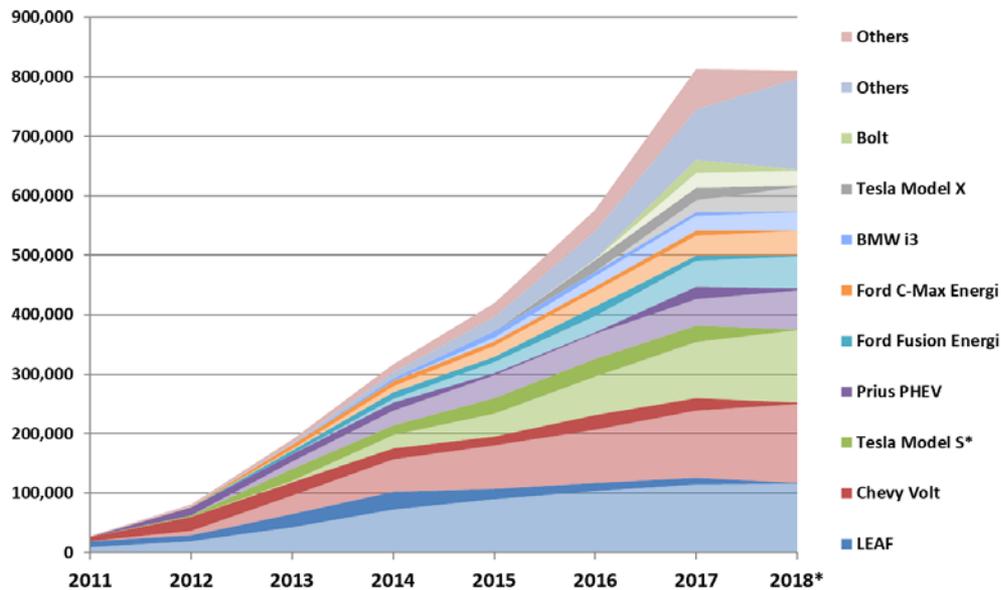
OCTOBER 23, 2017

# Technical Accomplishments for E-Drive Data

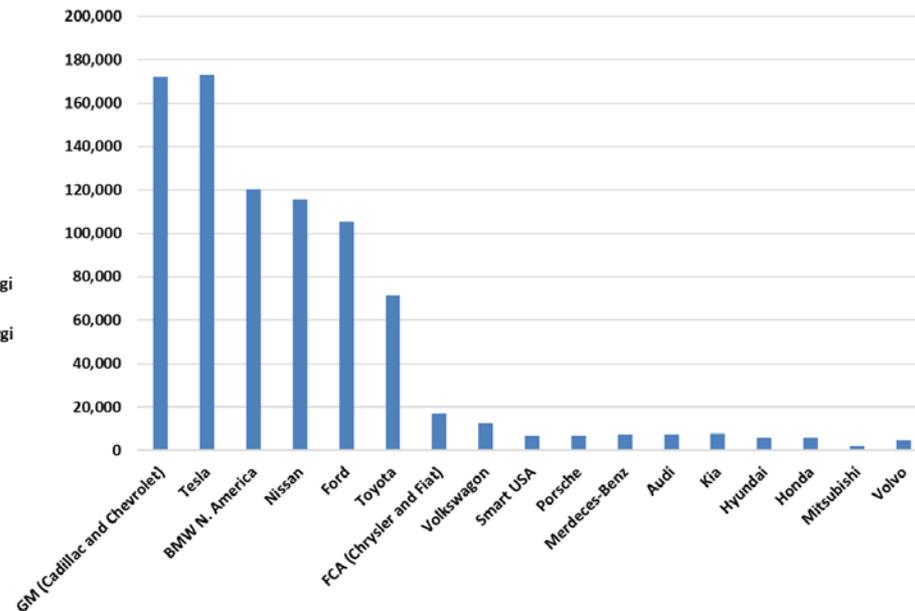
Extensive use of data products by DOE programs and other agencies

- Successfully published sales on website monthly <http://www.anl.gov/energy-systems/project/light-duty-electric-drive-vehicles-monthly-sales-updates>
- Supported DOE/EERE programs and activities such as Transportation Fact of the Week

### Cumulative PEV Sales by Model



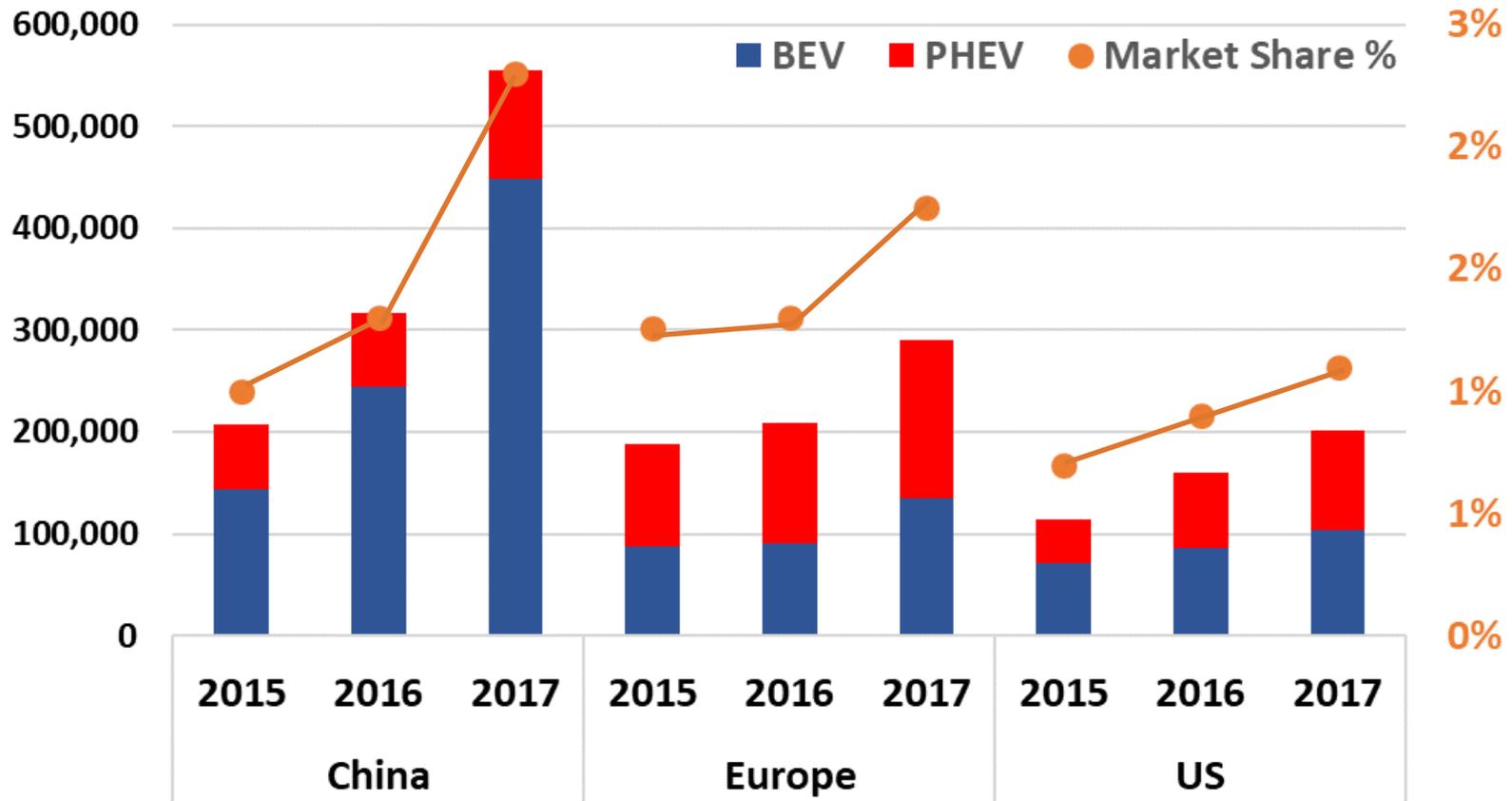
### Cumulative PEV Sales by OEM



Updated to February, 2018

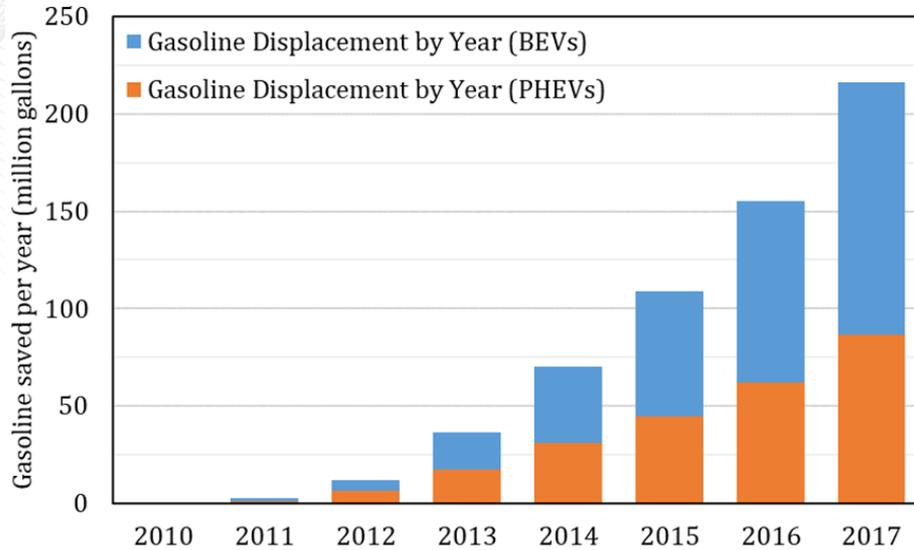
# Technical Accomplishments for E-Drive Data

- China's PEV market share was more than double that of the U.S. for 2017
- Europe's PEV market share also experienced rapid growth in 2017



# Technical Accomplishments for E-Drive Data

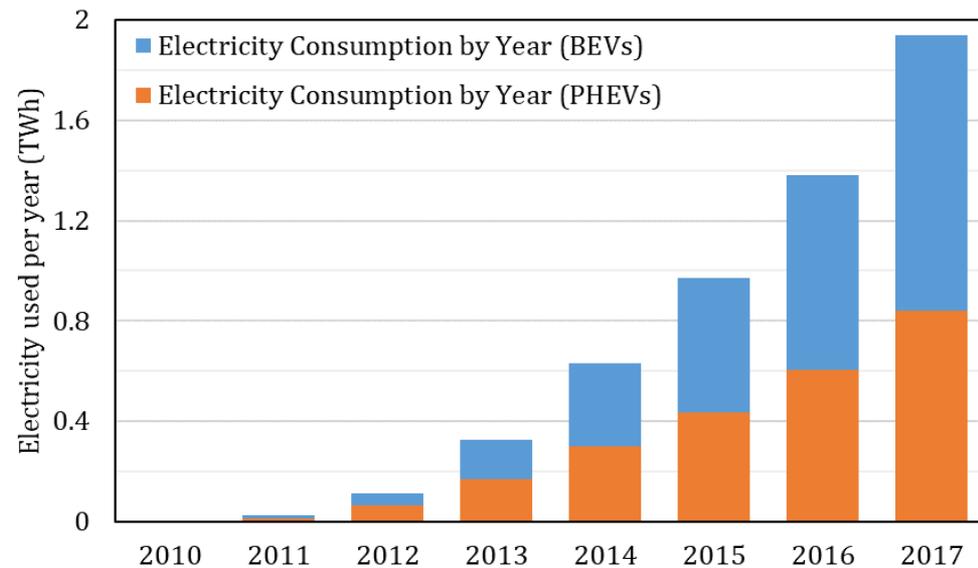
Gasoline Displacement due to PEVs by Year



From 2010-2017, a total of 5.4 terawatt-hours of electricity have been consumed by PEVs

From 2010-2017, PEVs have offset over 600 million gallons of gasoline, 353 million gallons by BEVs and 248 million gallons by PHEVs

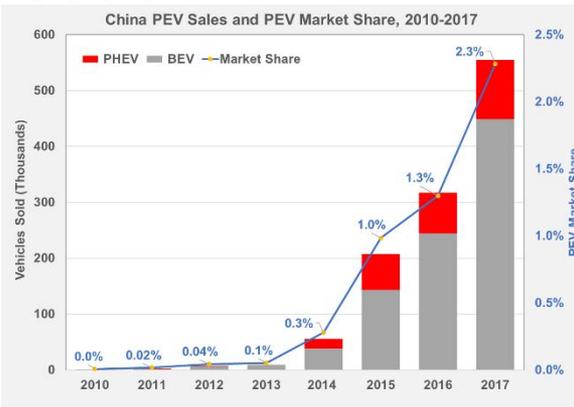
Electricity Consumption by PEVs by Year



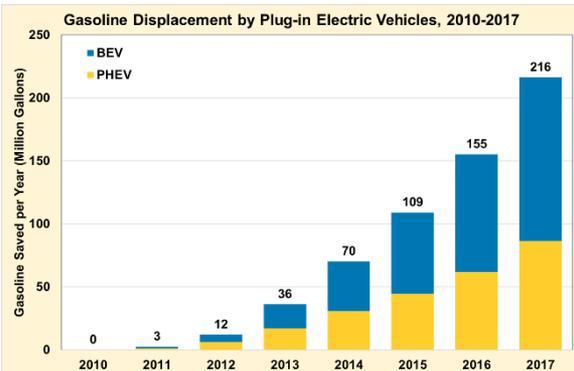
# Collaboration and Coordination Among Project Team

ORNL and ANL work together to meet the data needs of the VTO Transportation Analysis Program and work with other National Labs to showcase their work to a wider audience. Typically, through a Fact of the Week referencing the work.

ANL's E-drive data  
Fact #1025, April 16, 2018



ANL's Electrification Impact Report  
Fact #1029, May 14, 2018



ANL collaborates with Tsinghua University, Beijing, China, & European Alternative Fuels Observatory, Brussels

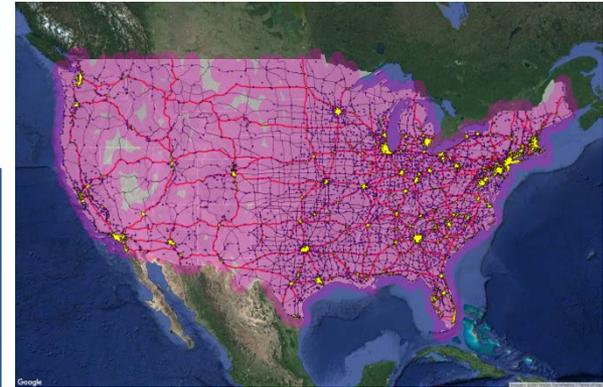
ORNL works with many public & private entities in the data collection process

ORNL and ANL regularly collaborate with VTO on the VTO Quarterly Analysis Review (QAR) and the VTO Analysis Newsletter.

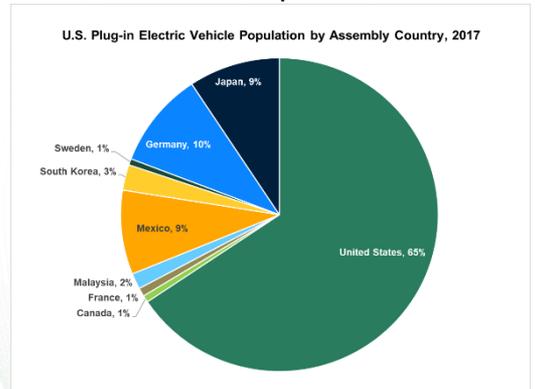
ORNL works closely with:

- VTO staff who approve each Fact of the Week.
- ANL staff who program and post the Fact of the Week on the VTO website.

NREL's infrastructure analysis  
Fact #1006, December 4, 2017



ANL's Electrification Impact Report  
Fact #1026, April 23, 2018



# Impacts

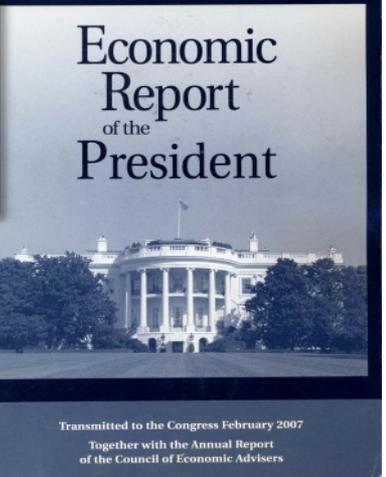
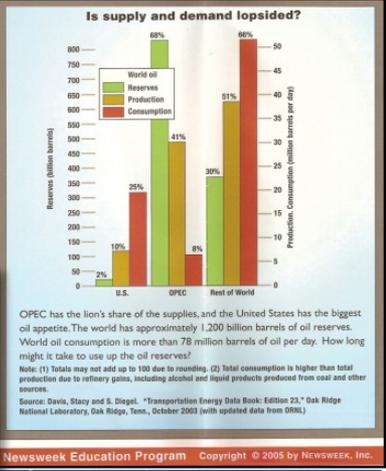
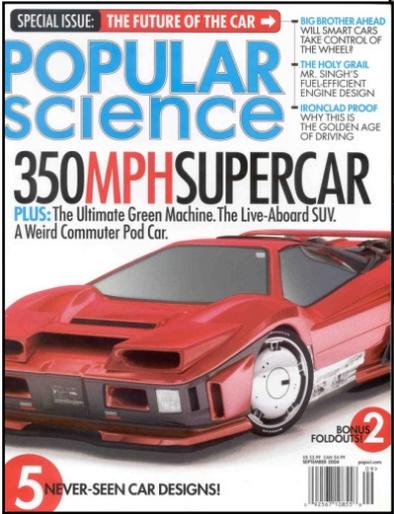
Data collected in the Transportation Data Program provides input data to other VTO programs and other agency's models, such as:

- MA3T
- GREET
- ADOPT
- Parachoice
- GPRA analysis
- DOE eGallon Initiative
- DOE Advanced Technology Manufacturing Loans Program
- National Science Foundation website
- EPA MOVES
- EIA NEMS

The Data Book has over 3,000 Google Scholar citations and the Fact of the Week is sent to >11,500 subscribers weekly

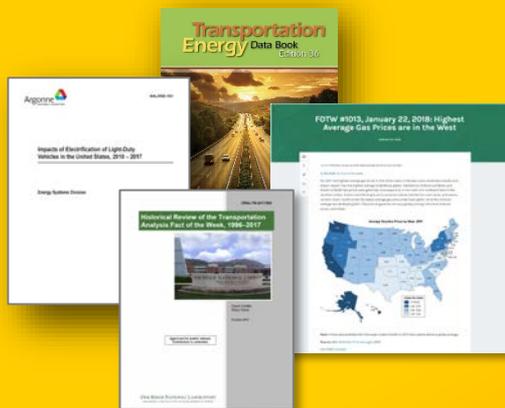
The Data Book is also used by Congressional staff, auto manufacturers, state governments, universities (professors & students), libraries, federal agencies, and more.

In the past, the Data Book has been cited in Popular Science, Newsweek Education Program, and the Economic Report of the President

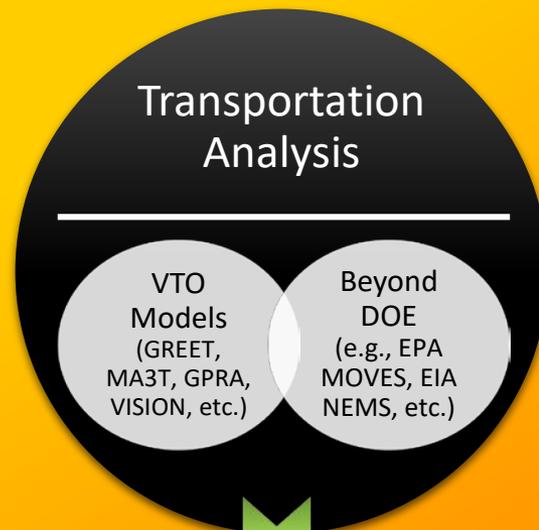
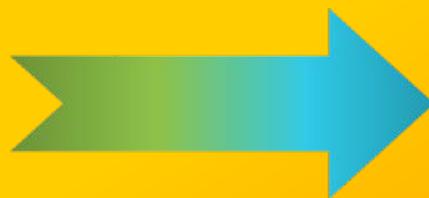


# Summary

Successful weekly, monthly, and annual milestones delivered on-time and within budget – improving over time



Collaboration with government, private sector, academia, & other laboratories



New policies, programs and technologies addressing transportation efficiency



Move people and goods using the most secure, energy-efficient, and cost-effective technologies.

# ACKNOWLEDGEMENTS

Rachael Nealer, Jacob Ward, &  
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US Department of Energy*

Philip Patterson, retired

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US Department of Energy*

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